New 92F

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NELSON ISLAND

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LOCATION: UTM Zone: 10U Northing: 5507900 Easting: 419500 (092F/09E)
Vancouver Mining Division, 35 km north-west of Sechelt, situated on a north facing slope south of unamed creek linking West Lake and Mackechnie lake located in the middle of Nelson Island.
CLAIMS: None.
ACCESS: Approximate 15 minute helicopter flight from Sechelt to the occurrence on Nelson Island. Alternate access is by boat to the foot of logging roads which can be traversed easily to the skarn showing.
OWNER/OPERATOR: None.
COMMODITIES: Copper, Iron.

A NEW SKARN OCCURRENCE ON NELSON ISLAND, SECHELT AREA

INTRODUCTION

Nelson Island (Figure B-x-x) is situated due east of the historic (and present) Texada Island iron and gold skarn, and limestone operations. Previous mapping by the Geological Survey of Canada (Roddick and Woodsworth, 1979) shows that Nelson Island is underlain almost exclusively by intrusive rocks of the Coast Plutonic Complex. The western two-thirds of the island are underlain predominantly by quartz diorite; exposures of granodiorite occur on the south end of the island at Quarry Bay and at the mouth of Blind Bay at the islands western extremity. The northwest end of the island consists of diorite. A belt of Late Triassic Karmutsen Group volcanic rocks is shown trending northwest across the middle of the island.

The area of interest is a heavily tree covered (second growth) prominent ridge. Recently constructed logging roads have created good rock exposures locally. Mining development on the Island consist of an abandoned dimension stone operation in Quarry Bay at the south end of the island. There is no record of exploration for metallic minerals on the island.

GEOLOGY

New road exposures have uncovered a previously unknown north trending band of limestone (Triassic Quatsino Formation?) bounded and extensively intruded by younger diorite and quartz diorite. The limestone has been largely altered to marble and skarn adjacent to intrusive rocks (Figure B-x-x). Skarn mineralogy includes garnet (andradite), diopside, epidote. Locally massive magnetite, disseminated and fracture-controlled pyrite and/or chalcopyrite exist. Table 1 briefly describes samples collected and submitted for analysis together with relevant assay values. Numerous narrow (eg. 0.5 to 3.0 metres in width) skarn zones or bands of skarn were observed. The potential "zone of interest" may widen along strike or with depth. Karst cavities locally were developed within unaltered limestone.

Limestone, the oldest rock on the property, forms a northwest trending band across Nelson Island. At the road-cut exposure the limestone band is about 100 metres in width and is cut by numerous diorite dykes. Most of the limestone has been metasomatically altered to a combination of marble and skarn. The marble displays wildly contorted banding defined by irregularly alternating plain white and black carbonaceous, pyrite-bearing layers. Boundaries between limestone and marble are gradational over 10s of centimetres. Skarn is of 3 varieties: massive pale brown garnet skarn, spotted brown garnet and pale green diopside skarn, and a pistachio green spotted (retrograde) epidote skarn. The more intense garnet-bearing skarn varieties are commonly associated with massive sulfide pods up to 0.75 metres across. Magnetite-actinolite zones occur outside of the limestone band and within hornfelsed diorite that contacts the western limit of the limestone. Diorite is dark grey-green, fine-grained and commonly contains 2 - 3% disseminated pyrite. A network of epidote coated-fractures cut the diorite. Medium to coarse grained equigranular quartz diorite forms the eastern margin of the limestone. The contact margin displays apparent granophyric texture over a width of less than a metre.

Table 1. Selected soil and rock samples from a skarn occurrence on Nelson Island.

Lab Number	Sample Number	Cu ppm	Pb ppm	Zn ppm	As ppm	Se ppm	Au ppb	Sample Type	Rock Description
42466	NI91-5A	154	10	284	70	0.83	-	soil	
42467	NI91-6A	135	72	3600	84	0.53	-	soil	
42468	NI91-12	225	14	285	10	0.22	-	soil	
42469	NI91-5B(dup)	282	<6	144	33	4.95	-	grab	py-rich pod in skarn
42470	NI91-6B	18	<6	123	4	<0.10	-	grab	gar-diop-marble skarn
42471	NI91-5B(dup)	278	<6	112	33	4.95	-	grab	py-rich pod in skarn
42472	NI91-7	5	<6	18	1	<0.10	-	grab	marble with py-bearing layers
42473	NI91-9	245	8	279	11	0.15	-	grab	ep-rich skarn; mal, tennorite(?)
42474	NI91-12A	75	<6	188	6	<0.10	-	grab	massive mgt-act skarn
42475	NI91-15	141	<6	137	59	2.50	-	grab	hornfelsed diorite (py+/- cpy)
42476	NI91-8C	157	<6	27	18	5.30	1	grab	diorite; diss py
42477	NI91-12B	3400	<6	640	6	<0.10	4	grab	mgt + mal + cpy skarn
42478	NI91-13	132	<6	157	8	<0.10	6	grab	massive mgt + act skarn
42479	Standard B	281	6	28	5	0.15	27	-	-
42480	NI91-5	237	<6	140	19	5.40	6	0.75m rock chip	py +/- cpy in skarn
42481	NI91-15A	296	<6	98	94	5.94	4	grab	hornfelsed diorite (py+/- cpy)

SUMMARY OF ANALYTICAL RESULTS

The analyses reported are for total metal extraction and therefore produce higher numbers than the more common partial extraction which comes closer to representing the "bio-availability" of metals (i.e. the amount that would be released during the natural breakdown of rock).

Locally anomalous arsenic values are commonly associated with skarn type deposits. The six rock samples that contained anomalous selenium are all samples of skarn that contained visible sulphide minerals. Selenium is chalcophile and commonly occurs at elevated levels in sulphide-bearing rocks of thermal metamorphic and hydrothermal character.

EXPLORATION POTENTIAL

This new find is evidence of the potential of this area for Texada Island style skarn mineralization and suggests that other similar occurrences may exist in underexplored, densely forested areas in the locality.

REFERENCES

Roddick, J.A. and Woodsworth, J.G. (1979): Geology of Vancouver west half and mainland part of Alberni; Geological Survey of Canada, Open File 611.

Roddick, J.A., Muller, J.E. and Okulitch, A.V. (1979): Fraser River Sheet 92 (Bedrock geology compilation); Geological Survey of Canada, Map 1386A.